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REMARKS

Applicant amends claims 6 and 12 for minor informalities. Applicant further amends claims 1, 20, and 21 to recite the limitation that an index search operation is performed in a first block. No new matter is added. Claims 1-21 are presented for examination, of which claims 1, 17, 19, 20, and 21 are independent. Applicant respectfully submits that the pending claims define over the art of record.

The Claimed Invention

The claimed invention is directed to the use of a first block to perform an index search operation for providing inputs to one or more blocks that perform interpolation in a graphical block diagram modeling environment. An *index search operation* is performed by first receiving a first value indicative of an index into a lookup table and then generating information indicative of the location of the first value *relative to a predefined domain* of possible indexed values that define regions, as required by independent claims 1, 20, and 21. The domain of index values can also be referred to as breakpoints, which is typically a non-repeating, monotonically increasing set of values. The breakpoints are the values at which the relationship which the table has sampled is evaluated for a given index. The breakpoints further define intervals or segments in which the index values may fall. See page 4, lines 4-12 of present application. Therefore, indexes or breakpoints do not need to be integers, as they define regions of a domain. Furthermore, the input to the first block can fall between two indexes. In other words, the input may not map to any index in the index table. The first block receives the input and determines the location of the input value *relative* to one of the intervals. See page 9, lines 1-22. The first block then provides the relative location of the input value to a second block that uses the relative location of the input value to interpolate between table data values.

Claim Rejection of Claims 1-5, 16, 20, and 21

The Examiner maintains the rejection of claims 1-5, 16, 20, and 21 under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 4,901,221 to Kodosky et al. (hereafter "Kodosky") in view of United States Patent No. 5,627,979 to Chang et al. (hereafter "Chang"). Applicant respectfully submits that the combination of the Kodosky reference and the

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Chang reference do not teach or suggest that in a first block, receiving a first value indicative of an index into a lookup table, and in the first block, generating information indicative of the location of the first value relative to a predefined domain of possible index values that define regions, as required by independent claims 1, 20, and 21. In other words, the combination of the Kodosky reference and the Chang reference do not teach or suggest *an index search operation* as required by independent claims 1, 20, and 21.

Without characterizing the Examiner's analysis of the Kodosky reference, the Examiner notes on page 7 of the Office Action that the Kodosky reference does not teach or suggest lookup table and index. Hence, Applicant respectfully note that the Kodosky reference cannot teach or suggest an *index search operation* as required by independent claims 1, 20, and 21 without the use of lookup tables and indexes. The Examiner further notes on the same page of the Office Action that the Chang reference teaches the use of indexes, record identifiers, link fields, and pointers to access information stored in a table at Col. 3, lines 39-50 and Col. 4, lines 19-21. However, the Examiner does not show that the Chang reference teaches or suggests receiving a first value *indicative* of an index into a lookup table and generating information indicative of the *location* of the first value *relative* to a predefined domain of *possible* indexed values that *define regions*, as required by independent claims 1, 20, and 21. The cited section in Chang merely teaches that a data model can provide records that are composed of indexes and other data. See Col. 3, lines 39-42. At best, the Chang reference only teaches a table that can contain indexes and nowhere does the Chang reference teach or suggest generating information indicative of the *location* of the first value *relative* to a predefined domain of *possible* index values as required by independent claims 1, 20, and 21. Hence, The Chang reference fails to teach or suggest how to search for an index using information indicative of the *location* of the index in a domain of *possible* index values.

The Chang reference teaches away from the claimed invention. The Chang reference is not capable of receiving an input that does not map to an existing index in the data model because only existing indexes are mapped to record and data. Therefore, there is no motivation for Chang to generate information that is indicative of the *relative location* of the input compared to other indexes. In contrast, the claimed invention can accept input that does not map to an existing index in the table because the indexes are sample points within a *domain* of

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possible values. Hence, a *relative location* of the input compared to the other indexes need to be calculated/generated so that a second block can use the relative location of the input value to interpolate between table data values.

Accordingly, the combination of the Kodosky reference and the Chang reference do not teach or suggest an index search operation as required by independent claims 1, 20, and 21. Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of independent claims 1, 20, and 21 and their dependent claims 2-5, and 16.

Applicant notes that dependent claim 4 recites the steps of in a third block different from the second block, receiving the information generated by the first block and using the information received in the third block to determine an output value of a second lookup table different from the first lookup table. In other words, claim 4 requires a second block and a third block receiving the same information from a first block and using the same information to determine an output from two different lookup tables. Applicant respectfully submits that the combination of the Kodosky reference and the Chang reference does not teach or suggest this limitation. Although the Chang reference at best teaches tables containing indexes and other data, nowhere does the Change reference teach or suggest using the same information to determine output for two different tables. The Kodosky reference does not cure the deficiency of the Chang reference because the Kodosky reference does not teach or suggest lookup tables.

Applicant notes that dependent claim 5 recites the steps of in a fourth block, receiving a second value indicative of an index into a lookup table, in the fourth block, generating information indicative of the location of the second value relative to a predetermined domain of possible index values, in the second block, receiving the information generated by the fourth block, and using the information received in the second block from the first block and the fourth block to determine an output value of the first lookup table. In other words, claim 5 requires both a first block and a fourth block to perform an index search operation using different input values and provides the information generated to a second block that uses the information from both the first block and the fourth block to generate an output of a lookup table. Applicant respectfully submits that the combination of the Kodosky reference and the Chang reference does not teach or suggest this limitation. Neither of the references teaches nor suggests that two blocks are

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required to perform an index search operation in order to generate an output from one lookup table.

Accordingly, Applicant respectfully request that the Examiner reconsider and withdraw the rejection of dependent claims 4 and 5.

Claim Rejection of Claims 6-14 and 19

The Examiner maintains the rejection of claims 6-14 and 19 under 35 U.S.C. § 103(a) as being unpatentable over the Kodosky and the Chang references in view of admitted prior art.

Claims 6-14

Claims 6-14 depend on independent claim 1. As set forth above, the combination of the Kodosky reference and the Chang reference does not teach or suggest independent claim 1. Applicant respectfully submits that the combination of the references in view of admitted prior art does not teach or suggest independent claim 1. In the admitted prior art, one block performs both an index search operation and interpolated table lookup, whereas the claimed invention requires one block to perform an index search operation and another block to perform interpolated table lookup. Applicant respectfully submits that the Kodosky reference, the Chang reference, or the admitted prior art teaches away from separating the operations of index search and interpolated table lookup. Hence, the combination of the Kodosky reference and the Chang reference in view of admitted prior art does not teach or suggest independent claim 1. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 6-14, that depends on independent claim 1.

Claim 19

Claim 19 recites the limitation that an interpolation block uses output of one or more pre-lookup index search blocks. The Examiner notes that neither Kodosky nor Chang teach or suggest this limitation on page 13 of the Office Action. The Examiner suggests that the admitted prior art discloses this limitation in Applicant's specification page 1, lines 10-12 and 25-26. However, the admitted prior art in Applicant's specification discloses one single block that performs both an index search operation and interpolated table lookup, whereas claim 19

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requires one or more block to perform an index search operation and a different block to perform interpolated table lookup. Applicants respectfully submit that there is no motivation in the admitted prior art to separate the operations of the index search and interpolated table lookup. Furthermore, the admitted prior art does not teach or suggest using more than one index search block to perform an index search and then feed the information to only one interpolation block. Accordingly, Applicant respectfully submits that the combination of the Kodosky reference, the Chang reference, and the admitted prior art does not teach or suggest claim 19. Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claim 19.

Claim Rejection of Claim 15

The Examiner maintains the rejection of claim 15 under 35 U.S.C. § 103(a) as being unpatentable over the Kodosky and the Chang references in view of United States Patent No. 5,481,741 to McKaskle et al. (hereafter "McKaskle").

The Examiner notes on page 4 of the Office Action that breakpoints are only used in the debugging of software code or a program. Applicant respectfully disagrees. Applicant respectfully notes that Applicant is allowed to be its own lexicographer. See MPEP 2111.01. Accordingly, Applicant respectfully requests that the Examiner uses the definition of breakpoints that the Applicant provides in the specification to examine the present application. Breakpoints are defined as the values at which the relationship which the table has sampled is evaluated for a given index on page 4 of the specification. They define intervals or segments in which the input value(s) may fall.

The McKaskle reference discloses breakpoints for debugging of software code. The meaning of breakpoints in McKaskle is not the same as the breakpoints defined in the present application. Hence, the McKaskle reference does not teach or suggest the limitation of a breakpoint data set index value as required by dependent claim 15. Additionally, the McKaskle reference does not teach or suggest the limitation of a distance fraction value for each dimension required by dependent claim 15. The Examiner suggests that the McKaskle reference teaches this limitation at col. 62, lines 59-63. However, the cited section merely teaches that an *index* is used to indicate where an array is split and **not** a *distance fraction* value for each dimension.

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Accordingly, the combination of the Kodosky reference, the Chang reference and further in view of the McKaskle reference do not teach or suggest the limitation of a breakpoint data set index value and a distance fraction value for each dimension and corresponding input value, as required by claim 15. Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claim 15.

Claim Rejection of Claims 17 and 18

The Examiner maintains the rejection of claims 17 and 18 under 35 U.S.C. § 103(a) as being unpatentable over the Kodosky reference in view of admitted prior art and further in view of the McKaskle reference.

As set forth above, McKaskle's meaning of breakpoint is not the same as the definition of breakpoints provided in the present application. Hence, McKaskle reference does not teach or suggest the limitation of a breakpoint data set as required by claims 17 and 18.

The Examiner notes that the admitted prior art discloses the interpolation lookup blocks are connected to at least one index search block. As set forth above, the admitted prior art in Applicant's specification discloses one block that performs both an index search operation and interpolated table lookup. Applicants respectfully submits that there is no motivation in the admitted prior art to separate the operations of the index search and interpolated table lookup.

Accordingly, the combination of the Kodosky reference and the McKaskle reference in view of admitted prior art does not teach or suggest each and every element and limitation in claims 17 and 18. Applicant respectfully requests the Examiner reconsider and withdraw the rejection of claims 17 and 18.

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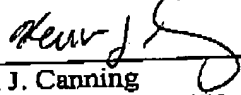
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CONCLUSION

In view of the above amendment, Applicant believes the pending application is in condition for allowance.

Applicant submits herewith a Request for Continued Examination and a petition for two-month extension of time. Applicant believes no other fee is due with this statement. However, if additional fee is due, please charge our Deposit Account No. 12-0080, under Order No. MWS-076RCE from which the undersigned is authorized to draw.

Dated: March 10, 2006

Respectfully submitted,

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